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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,417	02/01/2001	Sueng-il Nam	GB 000019	7406
24737	7590	04/05/2005	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			BURD, KEVIN MICHAEL	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/773,417

Applicant(s)

NAM, SUENG-IL

Examiner

Kevin M. Burd

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. This office action, in response to the remarks filed 1/13/2005, is a final office action.

### ***Response to Arguments***

2. The previous objection to the abstract is withdrawn in view of the amendment filed 1/13/2005.

Applicant's arguments filed 1/13/2005 have been fully considered but they are not persuasive. The examiner disagrees with Applicant's statement that "Chow expressly states that its system compensates for non-linear behavior of power amplifiers without the need for a receiver disposed at the transmitter" on page 9 of the remarks. Chow discloses the receiver 134 is disposed at the transmitter 132 in figure 1A (column 7, lines 55-59). Chow states "the receiver system operates to make the desired measurements and initially format the measured attributes for use in predistortion adjustment" and "the receiver may not only measure signal characteristics, but also may conclude that an adjustment is necessary to compensate for this distortion and, in the reverse link control channel bits, communicate the information necessary for proper predistortion to the transmitter" and "while only returning the data calculated by the receiver to be necessary for proper adjustment of predistortion" in column 6, lines 47-63. Therefore, Chow teaches errors due to the recovered signals being distorted by channel distortion are detected and compensated.

Claims 1, 4, 5 and 7 were amended. Chow receives a signal from the transceiver that has received the output of the transmitter. The transceiver receiving the output of the transmitter is, therefore, remote from the first transceiver. Chow also discloses the receiver measures signal characteristics and concludes that an adjustment is necessary to compensate for distortion as stated in the previous office action.

For these reasons and the reasons stated in the previous office action, the rejections of the claims are maintained and stated below.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karam et al (US 5,148,448) in view of Chow et al (US 6,614,854).

Regarding claim 1, Karam discloses a method of operating a communications system, shown in figure 4, in which the magnitude of the signal is varied (predistorted) and is modulated and transmitted. The predistortion occurs to counter act the effects of channel distortion of the constellation of the recovered signal (abstract and column 1, lines 7-31). Karam utilizes the signal that is to be transmitted as feedback to predistort the transmitter in the predistortion circuit 11. Karam does not disclose receiving a signal from receiver to correct for predistortion. Chow discloses, in figure 4, utilizing a

feedback loop in the transmitting node 401 to correct for the distortion created by the amplifier 413. Chow also discloses the receiver measures signal characteristics and concludes that an adjustment is necessary to compensate for distortion. This information is communicated back to the transmitting node 401 so proper predistortion of the transmitter takes place (column 6, lines 52-57). Additional information is provided in column 12, line 55 to column 13, line 20. It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the teachings of Chow in to the transmitter of Karam. Chow discloses a method of compensating for additional distortion than just the distortion created from the power amplifier. Distortion caused by the transmitted signal, the channel, input power modulation type, data encoding and aging components are also compensated (column 12, lines 41-54).

Regarding claim 2, Karam further discloses quadrature related components and the complements are combined and modulated in element 14 and transmitted. The signal is received in element 16 and decoded and demodulated. Distortions are measured and adjustments are made to predistort the signal in circuit 11 (column 6, lines 30-64). Distortions will occur in the constellations as shown in figures 3A and 3B.

Regarding claim 3, the complementary constellation points are used to determine the error occurring in the transmission to compensate for the errors present (Karam: figure 6 and column 7, lines 8-35).

Regarding claim 4, 5, 7 and 8, Karam discloses a method of operating a communications system, shown in figure 4, in which the magnitude of the signal is varied (predistorted) and is modulated and transmitted. The quadrature related

components and the complements are combined and modulated in element 14 and transmitted. The signal is received in element 16 and demodulated. Distortions are measured and adjustments are made to predistort the signal in circuit 11 (column 6, lines 30-64). Distortions will occur in the constellations as shown in figures 3A and 3B. Karam does not disclose receiving a signal from receiver to correct for predistortion. Chow discloses, in figure 4, utilizing a feedback loop in the transmitting node 401 to correct for the distortion created by the amplifier 413. Chow also discloses the receiver measures signal characteristics and concludes that an adjustment is necessary to compensate for distortion. This information is communicated back to the transmitting node 401 so proper predistortion of the transmitter takes place (column 6, lines 52-57). Additional information is provided in column 12, line 55 to column 13, line 20. It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the teachings of Chow in to the transmitter of Karam. Chow discloses a method of compensating for additional distortion than just the distortion created from the power amplifier. Distortion cause by the transmitted signal, the channel, input power modulation type, data encoding and aging components are also compensated (column 12, lines 41-54).

Regarding claims 6 and 9, the complementary constellation points are used to determine the error occurring in the transmission to compensate for the errors present (Karam: figure 6 and column 7, lines 8-35).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

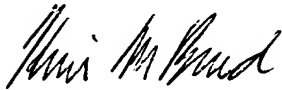
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Burd

4/1/2005

**KEVIN BURD  
PRIMARY EXAMINER**